INTRODUCING

TRADE MARK ®

Challenge

GRAND HAVEN, MICH.

Black

GRANITE

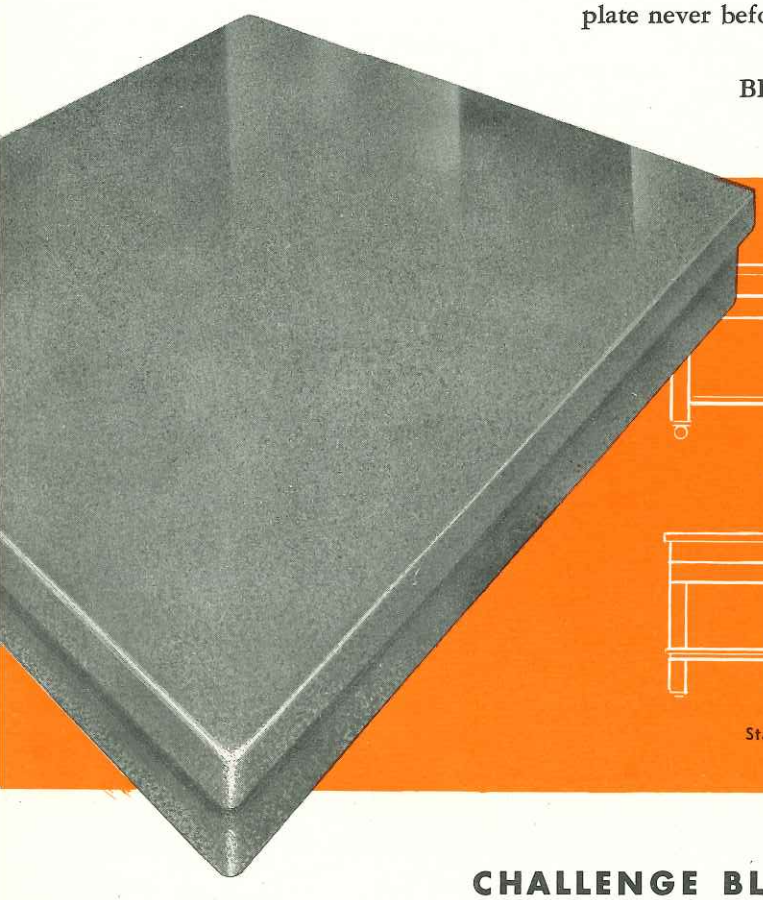
SURFACE PLATES

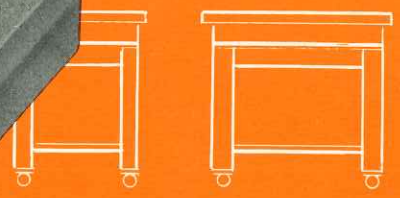
NEW CHALLENGE BLACK GRANITE SURFACE PLAT

Yes . . . There's PRECISION in Black Granite used in Challenge Black Granite Surface Plates.

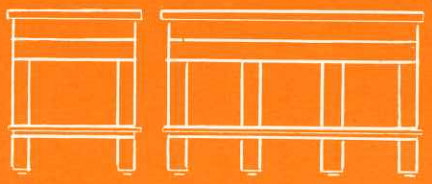
Here's a granite that's rated stronger, denser and less absorptive than normal granites by the authoritative National Bureau of Standards . . . . It's the newest addition to Challenge's complete line of precision equipment for the tool and machine industries!

PRECISION . . . because this black granite, normalized and stress-relieved underground through the ages, comes from rare boulder formations which are the result of upheavals from great depths in the earth. Scientific tests prove that "deep earth" granites are harder, finer-grained, purer, and less porous than "shallow earth" granites . . . making possible *Precision Flatness* in a surface plate never before achieved! For precision measurements that require the ultimate in precision smoothness, CHALLENGE BLACK GRANITE SURFACE PLATES are the answer.





Stand With Casters



Stand With Leveling Screws

Using Challenge Universal Right Angle Iron With Height Gage

CHALLENGE BLACK GRANITE SURFACE PLATES

. . . in a size for every precision function 8″ x 12″ x 2″ to 72″ x 144″ x 16″

. . . with 0 or 2 or 4 ledges

. . . and surface accuracy from 2 thousandths to 50 millionths of an inch!

Heavy Duty Steel Stands . . .

with casters or with leveling screws at top and bottom of each leg available on all standard sizes from 18″ x 24″ and up. . . *(See List, Page 4).*

ES GUARANTEE SURFACE ACCURACY TO .00005"

Check These Superior Precision Factors:

✔ **SUPER-HARD**—Equivalent Rockwell "C" rating of the granite used in Challenge Black Granite Plates is harder than hardened tool steel. Foreign particles or floating abrasives cannot nick or scratch this dense precision surface. Cannot warp from accidental shock or bump.

✔ **SATIN-SMOOTH, GLASS-HARD**—The finer grain of Challenge Black Granite, finished by a special oscillating honing process in the best equipped plant of its kind in the world, gives a satin-smooth, glass-hard "frosted" finish that's easy on the eyes as well as forming a perfect working surface.

✔ **BRASS SCRIBING**—The "blackboard" smooth surface of Challenge Black Granite Plates forms a perfect board for layout lines scribed by the use of a sharpened brass brazing rod. Since dirt, oil, or other foreign particles are easily washed away with ordinary soap and water, the lines can be wiped or washed off clean without the slightest injury to the plate.

✔ **NO DISTORTION**—The rigid density of Challenge Black Granite Surface Plates in homogeneous massiveness, assures freedom from distortion and deflection under pressure or load. Its extreme durability and long wearing properties maintain original accuracy.

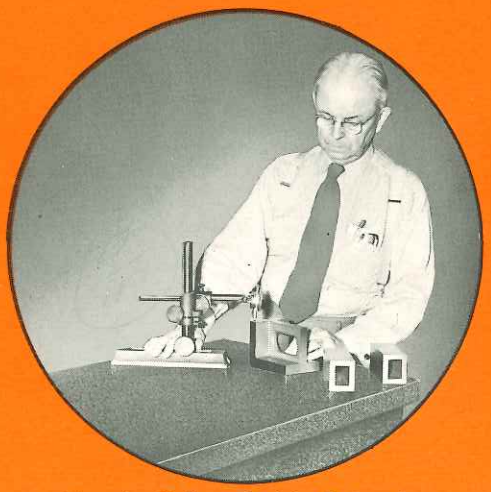
✔ **FLOATING MOVEMENT**—The satin-smooth surface of Challenge Black Granite Plates imparts a *"floating movement"* to instruments. The frosted finish gives a natural release of the air seal so there's no sticking, wringing, or vibrating even of tall gages. Dial indicator will not flicker a tenth.

✔ **NON-MAGNETIC**—Challenge Black Granite is non-metallic and inactive, therefore, non-magnetic in effect on the most delicate of instruments.

✔ **BUMP-FREE**—There are no compensating humps developed on a Challenge Black Granite Surface Plate if accidentally nicked or struck with a sharp instrument. The super-hard dense surface will powder off at the impact point. Surface powder can be easily brushed away with a cloth.

Using Challenge V-Block

Using a Challenge Universal Box Angle



Measuring Challenge Precision Equipment With Precision Indicator

The ultimate in surface accuracy for:-

- PRECISION INSPECTION
- LAYOUTS
- JIG AND FIXTURE BUILDING
- MOLD MAKING
- MOCK-UPS
- TOOLING
- SPAR MILLING LAYOUT

"Challenge"

BLACK GRANITE WORKING FLATS . . .

(8" x 12", 2" thick without ledges) accurate to .0002", over all, are ideal for machinists, tool and die makers, assemblers, model makers, and industrial designers. A convenient, portable, low cost foundation for mixing, mold and model making, layouts, assembly, and inspection.

Challenge
Black Granite Surface Plates

SIZE (Inches)	LEDGES	ACCURACY Total Deviation From True Flatness Overall	NET WEIGHT (Lbs.)	PLATE ONLY Price Each	Heavy Duty Steel Stands (EXTRA) With Leveling Screws	With Casters
8x12 x 2	0	.0002"	25	$ 22.00		
9x12 x 3	2	.0001	31	40.00		
9x12 x 3	4	.00005	27	50.00		
12x18 x 4	2	.0001	87	65.00	$65.00	
12x18 x 4	4	.00005	76	81.50	65.00	
18x18 x 4	2	.0001	130	100.00	65.00	$ 85.00
18x18 x 4	4	.00005	120	125.00	65.00	85.00
18x24 x 4	0	.0002	198	100.00	70.00	85.00
18x24 x 4	2	.0001	180	130.00	70.00	85.00
18x24 x 4	4	.00005	165	160.00	70.00	85.00
20x30 x 5	2	.0001	310	185.00	80.00	100.00
20x30 x 5	4	.00005	280	250.00	80.00	100.00
24x24 x 4	0	.0002	265	157.00	80.00	100.00
24x24 x 4	2	.0001	250	175.00	80.00	100.00
24x24 x 4	4	.00005	235	225.00	80.00	100.00
24x30 x 5	2	.0001	370	225.00	80.00	100.00
24x30 x 5	4	.00005	340	295.00	80.00	100.00
24x36 x 5	0	.0002	465	190.00	75.00	110.00
24x36 x 5	2	.0001	440	255.00	75.00	110.00
24x36 x 6	4	.00005	500	325.00	75.00	110.00
30x36 x 5	2	.0002	560	330.00	85.00	130.00
30x36 x 6	0	.0004	700	285.00	85.00	130.00
30x36 x 6	4	.0001	630	425.00	85.00	130.00
30x48 x 6	2	.0003	900	425.00	90.00	140.00
30x48 x 8	4	.00015	1100	565.00	90.00	140.00
30x60 x 8	2	.0004	1500	575.00	95.00	140.00
30x60 x 10	4	.0002	1700	710.00	95.00	140.00
36x48 x 6	2	.0003	1100	515.00	95.00	155.00
36x48 x 8	4	.00015	1350	650.00	95.00	155.00
36x48 x 8	4	.0001	1350	650.00	95.00	155.00
36x60 x 8	2	.0004	1800	670.00	125.00	205.00
36x60 x 10	4	.0002	2100	850.00	125.00	205.00
36x72 x 10	2	.0006	2700	865.00	130.00	210.00
36x72 x 12	4	.0003	2600	1030.00	130.00	210.00
48x48 x 6	2	.0004	1450	700.00	130.00	190.00
48x48 x 8	4	.0002	1800	855.00	130.00	190.00
48x60 x 8	2	.0005	2400	875.00	150.00	210.00
48x60 x 10	4	.0003	2900	1025.00	150.00	210.00
48x60 x 10	4	.00025	2900	1025.00	150.00	210.00
48x72 x 10	2	.0006	3600	1050.00	160.00	230.00
48x72 x 12	4	.0003	4200	1325.00	160.00	230.00
48x96 x 10	2	.0008	5900	1525.00	200.00	360.00
48x96 x 12	4	.0004	6600	1900.00	200.00	360.00
54x108 x 14	2	.001	7500	2000.00	240.00	400.00
54x108 x 16	4	.0006	6800	2555.00	240.00	400.00
72x144 x 16	2	.001	17500	4050.00	385.00	
72x144 x 16	2	.0005	17500	5650.00	385.00	

NEW REDUCED PRICES ON GRANITE PLATES See Revised Price List F2088 Dated May 15, 1957

ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. (Prices Are F. O. B., Alhambra, California)

2045*

NOTE:-

Definition of Accuracy:

All points on surface shall lie between two parallel planes separated by the accuracy specified.

Inspection: All "CHALLENGE" GRANITE SURFACE PLATES are INSPECTED optically by Auto-Collimator.

Consult your local Challenge Dealer for immediate quotations on variations of ledges or accuracies not listed here.

On two ledge Granite Surface Plates, the ledges will be on the short sides unless otherwise specified.

CHECK LIST

OF REQUIRED INFORMATION FOR ORDERING PLATES

If the size needed is not on the above list, or if inserts or holes are required in the plate, please furnish the following information for prices. PROMPT SERVICE is given on all such specials.

1. What is the required size?
2. How many ledges?
3. What accuracy?
4. What is the expected maximum working load to be placed on the plate? (This will determine if extra thickness is required?
5. What is the working height required? (Floor to top of plate.)
6. If holes are to be drilled in the plate, or inserts or T-slots mounted in the granite, please furnish sketches showing their desired location in as much detail as possible.

The Challenge Machinery Company

Office, Factories and Show Room

Grand Haven, Michigan

Challenge TRADE MARK GRAND HAVEN, MICH.

Dealers in All Principal Cities